

Product Performance Study Review

by Kevin J. Sweeney, Entomologist - IB

Kevin J. Sweeney
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To: Susan Stanton

Date: January 27, 2004

EPA Reg. No. or File Symbol: 279-GEIA

Product Name: Talstar 10 PH Insecticide

Registrant: FMC Corporation

PM: George LaRocca, PM 13

Decision No. 333953 DP: 295892

Action: 165

Chemicals: 10% bifenthrin

Type: WP Concentrate

OPPTS Product Performance Guidelines: 810.33, 34, and 35 where applicable.

GLP?: No

Sites: All outdoor sites listed except crops. Target is outdoor residential areas for nuisance mosquito and vector control.

Pests: adult mosquitoes

Application rates: 0.82 oz of 10% product diluted in a gallon of water equals a 0.06% (w/w) bifenthrin wettable powder suspension. 0.82 oz of product is applied per 1,000 square feet. The product can also be diluted in up to five gallons of water to deliver the same amount of product per 1,000 square feet. The label rate is equivalent to 25 mg bifenthrin/square meter and 0.22 lbs. bifenthrin/acre.

NOTE: EPA has approved mosquito control claims for homeowner products containing bifenthrin at lower rates and dilutions.

Label claims: see discussion below. The product is to be sold to professional applicators such as urban PMPs and government vector control programs.

Submitted Study: MRID 46101402 Efficacy of FMC 54800 10 WP for Insect Pests by J. Wright.

This submission includes a compilation of many field and laboratory studies. Some of these are published in journals, such as the J. Medical Entomology, or were part of the WHO evaluation of bifenthrin as a surface applied residual indoor insecticide primarily for the control of malaria vectors. However, data are included for dengue vectors and some of the vectors of the encephalitides. All of these field trials were conducted outside of the United States.

Entomologist's Recommendations:

1. The submitted data support the label application rate and product dilutions.
2. The results from the submitted data support a one month residual control claim against adult mosquitoes when used at the label application rate (0.82 oz. product/1,000 square feet; equivalent to 0.22 lbs. bifenthrin/acre).

The submitted data do not support a three to six month outdoor residual mosquito control claim. The data showed that 3-6 months of residual control could only be achieved when bifenthrin WP was applied indoors at 2x the proposed label application rate. At the proposed label rate, duration of efficacy against adult mosquitoes was variable, especially outdoors. Residual efficacy was affected by the porosity of the substrate and weather. The field trials from Malaysia showed this clearly.

3. Add a statement that describes the application rate as 0.22 lbs. bifenthrin/acre.
4. The **General Application Instructions** are confusing and require revision.
 - a. Only the 0.82 oz./gallon dilution is a 0.06% suspension. Therefore, delete the sentence: "Talstar 10 PH Insecticide for mosquito control uses a 0.06% w/w suspension."
 - b. For clarification, delete: "Use a spray volume of one gallon per 1,000 square feet or up to 5 gallons with correction from the application dilution chart."
 - c. This product should not be applied by all types of application equipment. Revise the application instructions to exclude truck mounted or hand-held cold aerosol ULV sprayers and thermal fogging devices. Include more specific references to a range of acceptable ground application equipment and nozzle types.

d. Add the prohibition: "Do not apply by aircraft" instead of "Do not apply by air."

e. Add the prohibition stating: "Do not apply through any kind of lawn sprinkler systems". Most applicators may not equate a lawn sprinkler system with an irrigation system.

f. Revise the table on page 2 to read as follows:

Application Volume (gallons suspension/1,000 sq. ft.)	To prepare the correct end-use dilution, add the following amount of Talstar 10 PH Insecticide per gallon of water
1 gallon	0.82 oz. or 23.15 grams
2 gallons	0.41 oz. or 11.58 grams
3 gallons	0.27 oz. or 7.72 grams
4 gallons	0.20 oz. or 5.78 grams
5 gallons	0.16 oz. or 4.63 grams

g. Add the following sentence before or after the table: "Do not apply more than 0.82 oz. (23.15 grams) of Talstar 10 PH Insecticide per 1,000 square feet (equivalent to 0.22 lbs. bifenthrin/acre) for control of adult mosquitoes."

h. I suggest the reference to a residual spray application be made at the beginning of the General Application Instructions because all the applications described on the label are intended to have residual control effects against adult mosquitoes..

i. Change the re-application directions to read: "For best results, apply once per month or every four weeks. Do not apply more than once per month."